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ABSTRACT

This paper examines the psychosocial development of Nepalese child laborers. The findings are discussed in relation to the questions of where and how learning occurs, whether transfer or generalizations occur from specific skills to other activities, and what role the socialization process plays in the psychological well-being of the Nepalese child laborers. The child laborers in the carpet factories had been participating in non-formal education classes before this study. They were administered the short version of the Nowicki-Stickland Locus of Control Scale. Findings showed that the psychological well-being of the children were at lower levels than that of their peers who went to school. However, the laborers had more internal locus of control, showing a higher sense of control over their lives. Practical implications are discussed. (Contains 144 references.) (JDM)

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# Psycho-social Development of Child Labourers

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Key Words: Child development, Cognitive skills, Child labour, Work, Education, Bender, Digit span, Arithmetic, Word fluency, WISC-R, Well-being

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# Psycho-social Development of Child Labourers

## Introduction

This paper discusses psychological literature on child labour. Moreover, issues related to psycho-social development are investigated and multi-disciplinary research findings on child labour are presented. In addition, findings on the psycho-social development of Nepalese children working in the carpet industry are discussed (Alaraudanjoki et al. 2001; Alaraudanjoki et al. forthcoming).

The necessity for the children to go to work can be seen as a symptom of the larger phenomenon of social disadvantage. Social disadvantage (low education, low income, low employment levels, or unemployment is associated also with lack of opportunity for developing effective social skills and parenting skills, which also as a negative mediator. In socioeconomic contexts where children's material contribution to the family is substantial, a utilitarian value is attributed to children and their work is seen as important. With changing lifestyles, especially with urbanization and increased parental education, child labour decreases in importance. This change is seen both in less actual work and in the lower importance accorded it by parents. The most important dimensions of variation are those of rural/urban environment and socioeconomic status (SES) (see Kagitçibasi 1996, pp. 19-34). There are mediating variables (at the levels of the caretaker, family, and community) between adverse conditions at the macro- level, such as poverty, and the growing child. The very existence of mediating variables allows room for action favorable to the growing child.

The context of development has a long history in the social sciences. There are two theoretical developments which are of interest here. One of these is life-span development theory, and the other is ecocultural theory. Especially with the impetus provided by Bronfenbrenner (1979, 1986), conceptualizations of environmental systems, nested within one another like Matrioshka dolls, multilevel bases of human development and functioning are taken seriously. Similarly, in cross-cultural psychology, Berry's ecocultural model of cognitive style (1976, 1979) has found acceptance as a general model of person/environment relations (Berry et al., 1992). In addition, problem-oriented research has emphasized family interactions as a key context variable for planning of programs to improve children's welfare. In short, one should be aware of the different levels of analysis when planning actions based on policy-driven research. The outcomes of activities are contextually and culturally dependent.

Sameroff and Fiese (1992) point out that all the risk factors work in a multiplicative rather than an additive fashion. For example, when two or more stresses occur together, the chance of a damaging outcome

goes up at least fourfold, and when four risks are present, the chances of later damage increase tenfold. In addition, Sameroff et al. (1997) note, based on their longitudinal studies, that changes in the numbers of risk factors are not common and stability rather than change appears to be the rule. In short, experience accumulated in the field has led to the finding that if four or more risk factors are present, the greater the likelihood that children will have problems in their later lives (Rutter 1979; Sameroff et al. 1997).

The researcher should be aware of risks associated with the study of disadvantaged children. The first is that of being overly objective. One could avoid emotion and be purely descriptive. The second risk is that of responding with too much emotion and failing to grasp the complexity of the intellectual issues. One might fail to elucidate the multiplicity of reactions to different degrees of trauma (Garbarino 1993). After interviewing about a dozen children who were physically and mentally abused in one of the carpet factories at which I conducted research, it was some time before I was able to analyze the complexities. I realized that the rescue operation conducted by the Ministry of Labour's inspectors rarely occur, but they raise the question "How many other small factories are there where people work in slavery?" The Ministry had received a tip about a particular factory owner keeping about 20 children as bonded labour. These children were interviewed over a two-week period for rehabilitation purposes. However, as these data represent a very special sub-group of the total sample, the analyses will be carried out separately and are not discussed in the present paper.

Psycho-social framework

Research on psycho-social development usually addresses two of its aspects: cognitive and emotional development. I would like to highlight the agency of human beings and add the importance of the subjects' will to change their living conditions. Thus the term psycho-social development in my study refers to the cognitive development, psychological well-being, and future-orientation of the children.

In discussing child labourers, I prefer the concept of "social disadvantage" (low education, low income, low employment levels, or unemployment; Kagitçibasi 1996) over the definition "children in particularly difficult circumstances" put forth by UNICEF (1986). Although both concepts refer to children whose suffering entails the highest level of risk to mental health, the latter refers particularly to children traumatized by war, or natural or technological disasters, and those living and working without parents (street children). Furthermore, social disadvantage is also associated with lack of opportunity for developing effective social skills and parenting skills, which also serves as a negative mediator (Kagitçibasi 1996). Hence, the concept of social disadvantage can be used when one is considering children who are affected by extreme poverty, severe malnutrition, forced prostitution, labour exploitation, or excessive family violence.

It has been assumed that starting to work at an early age has detrimental effects on children's development (e.g., Aptekar 1988 1989; Bequele & Boyden 1988; Fyfe 1989; Jansen et al. 1990; Marcus & Harper 1996; Myers 1991; Noto et al. 1997; UNICEF 1997). In contrast to the above negative predictions, others have presented child labour within a normative or even positive context (Aptekar 1989; Aptekar & Stoecklin 1997; Engel 1967; Kagan 1977; Morrow 1992; Panter-Brick et al. 1996; Whiting & Whiting 1975; Woodhead 1998). For example, Woodhead (1998) has argued that working children see their work as an inevitable and necessary part of growing up as well as a contribution to their future prospects and those of their family. In the classic study Children of Six Cultures, Beatrice and John Whiting (1975) found that chores in farming communities taught children responsibility and gave them a sense of worth and involvement in the needs of others. Furthermore, there might be a threshold after which developmental benefits diminish in comparison to the adversities of participation in working life (Larson & Verma 1999; White 1996). In addition, the value adults ascribe to children's participation in working life affects how a child perceives his or her work, and this process is culturally mediated (Alaraudanjoki 2000; Munroe et al. 1984).

As regards the work environment, Boidin (1995) identified the risk factors affecting the psycho-social and social development of child labourers. She asserts that low school attendance rates, fragmented and repetitive work, poor relations between child workers and employers, and the isolation and separation of the child from his or her family are the main risk factors affecting the development of children who work. Furthermore, different forms of ill-treatment are typically perpetrated on the child worker: under-payment, poverty and debt, isolation, being treated as an object, and being without a future supporting the fulfillment of one's potential may severely diminish the chances for a child's optimal development. Her account of the risk factors is in part ethnocentric because it does not account for the fact that most children in the developing world leave school before 6th grade. In particular, the statement referring to a child worker "being without a future" - thanks to Pierre Dasen for bringing this angle to my attention during discussion of my work in a seminar at the University of Geneva in July 2001 - is problematic since in the developing world around 80 % in each age cohort know what they will do in adult life. However, as the modernization process proceeds, this picture might change with increased economic development and greater urbanization.

Studies of working children have mainly focused on street children, showing them to have better mental health, positive self-esteem, and a more internal locus of control than their poorer counterparts (Baker et al. 1996, 1997; Felsman 1981; Ghosh 1992; Monteiro et al. 1998). Similarly, they have demonstrated the Eriksonian developmental characteristics of initiative, industry, and positive identity (Felsman 1981). In

addition, the working children seem to develop arithmetic skills that are at a par with or higher than those of schoolchildren (Alaraudanjoki et al. 2001; Carraher 1987; De Abreau & Bishop 1993; Grando 1988; Saxe 1988), and they have shown better nutritional status and taller stature than slum-dwelling children (Panter-Brick et al. 1996).

In contrast to street children, it is relatively difficult to study children working in more hazardous industries, due to resistance from employers, parents, and the children themselves. The more unacceptable the situation is, the greater the resistance. Moreover, the time taken by research is likely to be regarded as lost income by children and employers (Burra 1995). In addition, collecting data from socially disadvantaged children can be dangerous. There are obvious problems of disease and violence; the children may be in unsafe and hard-to-access situations. It may be legally difficult to contact them due to child protection regulations, or other access difficulties typical of studying sensitive topics (Herzberg 1993; Punamäki 1989; Richter 1991).

In Nepal, the basic human needs of most children are not being met (UNDP 1998; UNICEF 1998). Infant mortality rates are high (82/1,000). On average, slightly more than 71% of the population has access to safe water (urban 93 %, rural 68 %). Around 40 % of young children growing up in Nepal have not been fully vaccinated against polio, tuberculosis, DPT, or measles. With more than half of the adult population unable to read (41 % literacy for males, 14 % for females) and only 52 % of children reaching grade five, illiteracy rates are high.

Child work in Nepal is related to family poverty (Nag et al. 1978; Nieuwenhuys 1994). This is also true elsewhere in the developing countries where children are needed, and required, to work before or after school, thus participating in the economic activities of the family. Where a high infant mortality rate and difficult living conditions exist, families are culturally more inclined to adopt paediatric (versus pedagogical) approach to parenthood (LeVine et al. 1994). The pediatric model's primary concern is with the survival, health, and physical growth of the infant. Greenfield (1994) has criticized Levine et al.'s (1994) theory of "socialization for survival," opining that it will not hold for societies where scholarship has been part of society for a long time, as in Chinese and other Asian cultures. However, I would like to underline the potential of theory by giving a functional explanation for some child-rearing practices in the Nepalese context. The social disadvantage and low quality of education available support the assumption that Nepalese parents are more inclined to adopt a pediatric model of parenthood. Furthermore, the fact that Nepalese middle classes aim to send their children overseas for education confounds Greenfield's generalization of established scholarly culture in all Asian cultures.

Nepalese children feel a strong sense of duty toward their parents, and they want to help their parents. Among the carpet-weaving population there are also migrant families who are adapting to their new environment and struggling for existence. There are even children who have been either sold or given to a contractor as security for loans taken out by their parents. Such children are classified as bonded labour (ILO 1998). Consequently, it is part of the normal growth process in Nepal for children to work in the home with their parents, whether or not they go to school. Moreover, Segall et al. (1997) have demonstrated in a review that work and household chores serve as a powerful and positive socialization practice.

The weaving industry in South-Asia has been studied in India (Das et al. 1992; Mishra & Tripathi 1996). The occupational hazards found among Indian weavers included a persistent cough with expectoration, backache, the common cold, and joint pains (Das et al. 1992). In India, weaving of carpets is mainly confined to the countryside, whereas, manufacturing in Nepal is concentrated in urban factory settings. Moreover, working conditions in the factories further increase the number of risk factors present during children's early development. The health hazards of the carpet factories include: bad ventilation of working areas in which wool fluff is present in large quantities, insufficient lighting, inadequate toilet facilities, ergonomic risks due to repetitive work tasks, static working positions (Alaraudanjoki, 2000). Hazardous working conditions such as these in the carpet industries may thus cause boredom and dullness in a child. Possibly leading to delayed intellectual development. Thus, the social disadvantage in this study mainly refers to familial poverty seen in poor working conditions and lack of formal education.

Time use studies have shown that children's total work time in non-industrial countries is between six and nine hours, and their total free time is four to seven hours per day (Larson & Verma 1999). Furthermore, they (1999, p. 711) argue that "given the repetitive nature of most of the labor carried out by children of the world, it would be hard to argue that there are additional developmental gains for youth who spend more than 15 - 20 hr per week in such labor." In contrast, the Nepalese carpet-making children are likely to work between nine and eleven hours per day, with practically no free time.

Cognitive development among disadvantaged children

The study of cognition should reflect and take into account the individuals social experience (Bartlett 1932). Empirical studies are rather consistent in pointing out how much the performance of cognitive tasks of different types is related to their various contexts (Schliemann et al. 1997). Whenever psychological tests are used with disadvantaged populations, it is important to know not only the cultural biases of tests and testing but also the children's age. Furthermore, the tests have to be as independent of reading skills as possible (Aptekar &

Stöecklin 1997). In addition, while studying the cognitive development of disadvantaged children, one should control the familiarity of the situation where the investigation takes place, and tests or tasks to be performed ought to be meaningful to all subjects. For example, Serpell (1979) reversed the usual familiarity bias in a study of European and Zambian children and found their Scottish sample to have lower performance of unfamiliar tasks. This section deals with principles of a cross-cultural research methodology, examines previous cognitive research on weaver populations, and discusses issues related to questions such as where learning occurs, and whether transfer or generalization from a specific skill to other activities occurs.

If the aim is to assess the mental ability of people in a culture that has yet to develop its own testing scheme or system, it is necessary to assess what is important in and for that culture (Brislin et al. 1973). This implies not imposing or projecting one's own psychological values onto other cultures. A major objection to much resent cross-cultural research is that the materials researchers used were artificial, alien, and simply not meaningful to the members of the culture in which a given study was done (Guthrie 1977). Brislin et al. (1973, p. 111) argued that "it makes little sense to go through various technical contortions in adapting an American or British test so that it 'fits' the target culture. The mere existence of a famous test, such as one in the Wechsler series or the Stanford-Binet, does not mean that it must be used, or that it somehow automatically qualifies." Most intelligence tests are based on content analyzes of materials and concepts familiar to children at different age levels in the United States, and the results of the analyses suggests that certain types of test items will achieve the goals of the test. But the results of such content analyses are not valid in cultures where people have different experiences, value different ideals, and use different materials in their everyday behavior (Segall et al. 1999). However, if some items of famous tests have proved to differentiate individual performances within various populations, then one could take a pragmatic position (Biesheuvel 1972) which suggests that if an ability test is to be used only within a culture (i.e., no cross-cultural comparisons are being attempted), we need only have a test which will spread individuals over a reasonable range of scores.

The research on cognitive development among weaver populations has studied the effects of culture and education on cognitive development in Mexico (Childs & Greenfield 1980), the possibilities of generalization regarding cognitive abilities acquired through weaving versus schooling among Navajo Indians in the USA (Rogoff & Gauvain 1984), the use of strategies by Kashmiri weavers in interpreting weaving instructions (Khan 1993), and planning behavior of Dioulas (in a non-weaver group there was some Senoufos) from the Ivory Coast (Tanon 1994). All studies involved a setting where influences of formal education (schooling) were compared to those of informal education (weaving). The results of the first two studies did not support the

generalization of abilities acquired in weaving to new contexts. However, the latter study demonstrated that Dioula weaving activity not only fosters the development of cognitive processes, such as planning, but also facilitates the generalization of control procedures to a new task (Tanon 1994).

The question of the differences between cognition in school and cognition at work relates most obviously to the ways in which teaching occurs. Teaching in schools is characteristically set apart from everyday life contexts and is the responsibility of teachers who must cover, with a high degree of systematization, certain content explicitly set forth in the curriculum. Instruction in school is mainly verbal, with presentation of general principles that should be learned for their own sake rather than for their relevance in achieving practical social goals. In contrast, learning outside school usually takes the form of apprenticeship embedded in daily life activities. The learner develops knowledge and skill through participation in socially relevant activities. More skilled participants may help, but there is no systematic curriculum to be followed and little verbal explanation. Instead, demonstration, observation, and imitation are thought to be ways of learning (Greenfield & Lave 1982).

The debate on whether transfer of domain-specific skills or knowledge into new situations and on generalization (i.e., when a piece of knowledge or skill from one activity can be used in another activity) has raged over the years (see Segall et al. 1999). This is a particularly interesting topic in the investigating of the learning of working children. Its importance lies in the question of whether knowledge acquired in work has any significance in other activities. School is said to promote generalizable procedures and knowledge, at least in some circumstances, while culture-specific skills are not considered to support applications across domains or in unfamiliar situations (Berry & Bennet 1991; Dasen 1987; Greenfield & Lave 1982; Hatano 1982; Rogoff & Gauvain & Ellis 1984; Scribner & Cole 1981).

On the one hand, some empirical studies have questioned whether specific skills learned in everyday-life contexts can have transfer effect to other learning situations (Nunes 1993; Scribner & Cole 1971). For example, the mathematical skills of unschooled children and those working in the market found expression only in the activities they performed in day-to-day life (e.g., counting money required for a drink). Transfer of these skills to formal mathematical situations seems to be doubtful (Carraher 1991; Saxe 1991). On the other hand, research on everyday cognition shows that individuals who perform poorly on laboratory tasks, IQ tests, or school assignments may use, in their everyday, out-of-school activities, intellectual skills thought to be lacking. This suggests that failure in school need not imply an inherent inability to understand (Schliemann D. C. Carraher & Ceci 1997).

Conceptual knowledge, as opposed to rule-bound procedural knowledge, will support transfer across

situations (Guberman & Greenfield 1991; Hatano 1982; Hiebert & Lefevre 1986; Schliemann & Magalhães 1990). The study among Ivory Coast weavers showed that weavers could transfer procedural knowledge (Tanon 1994), but this transfer is of limited influence if not supported by conceptual knowledge (Chi & Greeno 1987; Dasen 1987; Hatano 1982). Moreover, transfer is more likely to occur among subjects who have had some school experience (Schliemann & Magalhães 1990). For example, the schooled weavers who combined both modes of education achieved greater success. This confirms the impact of a mixed type of education, promoted in some developing countries. The central factors contributing to transfer of planning skills are (1) transfer of control procedures, (2) the link to novel contexts, (3) the importance of economic ties which enhance the generalization process, and (4) training methods consisting of both the scaffolding and trial-and-error technique (Tanon 1994).

To conclude, regarding specific skills versus organization or patterning on both the context and performance sides of the culture-cognition relationship, we can keep in mind Mishra's (1997, p. 206) synthesis, "So-called concrete knowledge acquired in everyday familiar situations may ultimately play a fundamental role in the development of 'abstract' knowledge." Furthermore, we can conclude that "cognitive processes are commonly shared by all individuals, that cognitive competencies develop in different ways according to the demands of one's ecology and culture, and that valid inferences about these competencies can be drawn only by situating assessment in the broader cultural life of individuals or groups (Mishra 1997, p. 156)."

Psychological well-being among disadvantaged children

The psychological well-being of socially disadvantaged children has mainly been approached from the risk-factor (Rutter 1987; Werner 1989), stress (Höfer & Strauss 1997; McCubbin et. al. 1998), and resilience perspectives (Boyden 1999; Garmezy 1993; Richmond & Beardslee 1988; Rutter 1987; Werner & Smith 1982). Psychological well-being is a culturally loaded concept which has been evaluated in the Western context by the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (American Psychiatric Association 1994), and in the developing world by the International Classification of Diseases and Related Health Problems, 10th revision (WHO 1992).

In order to understand the nature of anxiety (which the present study uses as an index of psychological well-being) among child labourers, one should note that the time they spend in income-generating labor reflects demands imposed by families' material conditions. Therefore, anxiety can be understood as a coherent emotional structure serving the adaptive purpose of preparation for future challenges or threat (Barlow et al. 1996). Cognitive and psychological vulnerability are related to early experiences of uncontrollability (Barlow et

al. 1996), and, when combined with a biological vulnerability and triggered by the stress of negative life-events, lead to clinical anxiety, and some time later to possible depression (Barlow 1991; De Souza et al. 1995). In addition, the sense of control has been found to be the most important factor in regulating stress physiology (Sapolsky 1992; Sapolsky & Ray 1989). The "Revised Children's Manifest Anxiety Scale" by Reynolds and Richmond (1978, 1997) is widely used as a measure of anxiety in child populations.

Interest in the dimension of control has a long history in psychology (e.g., Rotter 1954; 1966). The first reliable and valid measure of locus of control in children, the "Nowicki-Strickland Locus of Control Scale" (1973), was developed by Nowicki and Strickland. According to some emotion theorists, fear is a distinct primitive basic emotion (Ekman 1992; Izard 1992; Izard & Blumberg 1985). Fear occurs when we are directly and imminently threatened; thus, it can tell us something about the environment where a child lives. Research in industrialized countries indicates that the content of fears would be quite different for lower-class and urban children than for middle-class, non-urban children and that these fears are likely to transcend race or ethnicity while being more closely related to the stressors of poverty, neighborhood stability and crime rates (Neal et al. 1993; Neal & Turner 1991).

Resilience refers to individuals having some measure of success despite coming from situations where success is not predicted, or ability "to spring back" (Garmezy 1993, p. 129). In other words, resilience enables people to recover and return once again to patterns of adaptation and competence. In empirical studies, resilience usually refers to academic achievement (Miller 1996). Manifest resilience refers to social and academic competence, whereas emotional resilience refers to levels of stress responses.

## Discussion

### How might work at a young age affect psycho-social development?

My research has examined the psycho-social development of Nepalese child labourers. Policy-driven research aims to study those target groups which are considered by national or international organizations as important and often urgent ones. Hence, contextual aspects of this research were discussed in the review article (Alaraudanjoki 2000). Similarly, the issues related to cognitive (Alaraudanjoki et al. 2001), and psychological well-being (Alaraudanjoki et al. forthcoming) development were investigated. The findings will be discussed below in more detail in relation to the questions of where and how learning occurs, whether transfer or generalization occur from specific skills to other activities, and what role the socialization process might play in the psychological well-being of the Nepalese child labourers.

Studies have consistently shown that educational attainment is a particularly critical factor in verbal tasks (e.g., Ardila & Rosselli 1988). In fact, verbal abilities, as measured by psychometric intelligence tests, are more educationally dependent than non-verbal abilities. The items more sensitive to socio-educational level are those that involve the use of complex conceptual aspects of language, as well as those involving organization of motor sequences and motor programming (Ostrosky et al. 1985, 1986). This association between educational level and language and motor abilities has been further confirmed (Rosselli, Ardila & Rosas 1990). Similarly to Ardila et al. (1992), who showed that school has a particularly strong influence on verbal tests, our findings support this association but raises the question of whether full-time work at an early age limits overall cognitive development by restricting the development of specific knowledge and skills to very narrow fields. Moreover, the psychological well-being of the children working in the factories seemed to be at lower level than that of the school-going children (Alaraudanjoki, et al. forthcoming). However, the children's participation in working life had increased their sense of control over their lives.

One could argue for the benefits of more focused attention and short-term memory skills, which can in part be explained by the training effect, if a child were then to be moved away from the work context. I visited another rehabilitation center, where social workers were observing children who had been there nine months after earlier working in the carpet industry earlier. They described these children to be the most dutiful pupils they had come across. While they had become "good" pupils, I felt they would need to re-learn how to play. In conclusion, the socio-emotional development of the children working in the carpet factories might involve growth of a sense of control and responsibility. Furthermore, my study's findings on cognitive skills raised a hypothesis that the carpet-weaving children's cognitive skills might develop in a very restricted way. However,

some restraint is in order when interpreting these findings. For example, one could argue that more favorable results could have been obtained with measurement of a broader range of cognitive skills. In order for transfer of specific skills to other activities to occur, the children would need a mixed type of education. Thus, the basic reading, writing, and formal mathematics skills could be learned while working.

The stronger internal locus of control might in part be explained by (a) increased manual labor skill level acquired via work, (b) the more restricted environment which factories offer, and (c) perhaps earlier maturation in terms of household economy. However, the sense of support from extended family might be diminished, especially when a child is not working with family. Thus, the sense of internal locus of control which originates from self is enhanced. In comparison, some social science researchers have found among street children that peer groups might provide an important support group enhancing children's survival skills (Ennew 1994), thus leading to a more internal locus of control (see Aptekar & Stöecklin 1997).

The source of an internal locus of control may not be restricted to the self as Rotter (1966) originally suggested, but there can be multiple sources of a sense of internalized control (Chia et al. 1998). In the terms of Chia et al. (1998), the sense of control can be acquired through the processes of developing an indirect internal locus of control, which accounts for the extended family friend network. Thus, in collectivist societies, an internal locus of control may have multiple sources. Therefore, the more indirect (external) locus of control of schoolchildren in this study can be interpreted as ability to gain a sense of control through extended family. Alternatively, the school environment in Nepal offers structure which does not require much independent thinking.

In a review, Beardslee (1989) found five strategies used by resilient individuals: (1) adequate cognitive appraisal of the situations and one's own response, (2) a realistic appraisal of one's capacity for actions and their consequences, (3) taking action, (4) a developmental perspective on the challenging situation, and (5) cognitive understanding of the situation as a protective factor. I found that resilience might adequately describe many of the children working in the carpet industry. They showed a strong sense of control over their lives, and, like their peers in school, they understood the connection between poverty and their families' economic hardships. Despite the overall similarity in use of coping strategies of the labour and school groups, members of the school group seemed to drink more alcohol, but this might rather reflect more the Nepalese socialization procedure than use of alcohol for coping. In Nepal, the Buddhist Tibeto-Burmese population allow children to have a sip of the alcohol drink at parties and at home if they show an interest. This might explain the differences in alcohol consumption.

White (1996) has presented an alternative approach which places types of work on a continuum, with the most harmful and extreme at one end and the least harmful (and possibly even beneficial) at the other. The most recent attempt to tackle the definition problem at hand has been discussed by McKechnie and Hobbs (1997) in their balance model, which takes into account the cost/benefit variables and acknowledges the context where the work is being done. The basic benefit of the balance model is that by employing the model it is possible to get a clearer operational definition of what constitutes a cost or benefit of employment. They argue that a number of specific variables will need to be studied, such as the number of hours worked, the type of job being done, when the hours are worked, gender, and age. The proposed advantage of this model is that all of the variables, those within the balance and variables that may influence the balance, can be investigated, operationalized, and clearly defined. This model also contains a degree of flexibility in that it can acknowledge that the context will play a role in defining the balance itself. The current model acknowledges that the balance does not exist in a vacuum. They use context to refer to social, developmental, and cultural factors (McKechnie & Hobbs 1997). Ultimately, it is the cultural context which defines the variables to be included in the balance equation. Even if there are no universal criteria for conceptualizing the issue of children's economic participation, they agree with the argument that attending to the context does not preclude the application of external criteria to identify what is beyond acceptability. Any experience which, for example, affects normal growth or is associated with pathological problems must be taken into consideration (Woodhead 1999). In addition, there might be a threshold after which developmental benefits are outweighed by the adversities of participation to working life (Larson & Verma 1999).

Methodological evaluation

Some of the problems of studies of this type include the inaccessibility and invisibility of working children, cultural issues related to the methods used, and the constraints of both time and resources. It seems that without institutional support, such as that of the ILO in our case, such studies are virtually impossible. Regarding time, the total duration of data collection was 2.5 hours per child, which made it possible to collect data quickly. A larger methodological package would not have been feasible. The Psycho-social Health Assessment screening procedure made it possible to cover a wide range of psychological functions in a short time. This was preferred to an extensive survey of working conditions and work environment. These results can be generalized across Buddhist Tibeto-Burmese Nepalese children who are either working or attending school. The contextual issues related to studies of children's participation in working life have been discussed elsewhere (Alaraudanjoki 2000).

The methods used have been chosen with consideration for their global application, and they were read aloud to children due to the high illiteracy rate among carpet-weaving children. The methods of this screening tool in relation to cognitive skills seemed to function well, apart from the Bender test (1938) which produced a high error-mean even for the school group. Although the children at school were more used to test-taking and pencil-and-paper tasks, the labourers in the carpet factories had been participating in non-formal education classes for at least two months before the study. Thus, they were used to handling pencil and paper to some degree. Due to limited possibilities for education, some work-related goals and concepts of self, as well as social responsibility to parents in terms of contributing to the family's income, may hinder the enthusiasm of child labourers for schooling (see also Woodhead 1998). In addition, as discussed above, the Wechsler series of intelligence tests has sometimes been used without caution. In my study the sub-tests of Digit Span and Arithmetic did serve the purpose of differentiating across and within groups the individual performance.

The methods for determining psychological well-being managed to differentiate children in this study. I and my colleagues adapted a non-ethnocentric approach and used raw scores in comparisons. In order to use the working children's limited participation time effectively, we used the short version of the Nowicki-Strickland Locus of Control Scale. This decision was justified since other investigators have found it difficult to replicate Nowicki's finding (1976) of three factors (Barling 1980; Lindal & Venables 1983; Pietrowski & Dunham 1983; Raine et al. 1981; Walters & Klein 1980). Due to the ambivalent nature of the concept of locus of control - especially in the cross-cultural setting (see Hui 1982), it would be interesting to examine sense of control among resilient children in collectivist societies. However, the results are difficult to compare cross-culturally since children's economic contributions to their families' subsistence may be valued differently in various cultural contexts (Alaraudanjoki 2000).

Tyler et al. (1992) argued that adaptation of tests can only be adequately dealt with by local researchers who speak the same language as the respondents and have real insight - and ideally experience - of their daily lives. The etic approach was used in this study, and the methods were adapted to Nepali conditions before and during the pilot phase by Professor Regmi's team using a committee approach over one intensive week. Thus, Tyler et al.'s requirement was fulfilled in this study. However, a more culturally sensitive approach should be adopted while investigating children who work. The local expressions of anxiety, for example, should be examined and applied. Also, different occupations develop cognitive skills which might not be detected using standard cognitive psychology methodologies. Furthermore, the contextual issues related to multi-disciplinary child labour studies and the value given to children's participation in working life in different cultures have been

discussed elsewhere (Alaraudanjoki 2000).

My suggestions for future research on child workers' cognitive skills and psychological well-being would include (1) adding a short word, non-word, and sentence reading test, (2) ascertaining whether the children work with or without their parents, (3) determining how many years of formal education a child has, (4) including, to complement NSLCS, perhaps the Shapiro Control Inventory (1994) sub-scales of Domain of Control and Agency of Control, (5) using anthropological or ethnographic research methodologies to allow the relevant topics to emerge for investigation, (6) using a basic malnutrition indicator as originally suggested by Ennew (1994) but not used in this study. Regarding the latter point, synergy between action programs is basically a good thing, but to carry out independent data collection is even better.

Practical implications

What kind of actions could be taken to enhance the psycho-social development of the children in Nepal? In contrast to the findings of six to nine hours of total work time and four to seven hours of total free time in the non-industrial countries (Larson & Verma 1999), the Nepalese children working in the carpet factories have 11- to 14-hour work days with practically no free time. A good intervention program for child laborers could incorporate non-formal-education and structured leisure time activities (Eccles & Barber 1999; Larson & Verma 1999; Marsh 1992; Youniss et al. 1999; Youniss & Yates 1997), and play-time sessions which (a) offer an opportunity to accommodate a young person's developing schema to the realities of the external world (Piaget 1962) and (b) are part of preventive medicine (Dasen 1984). In addition, the time spent with adults and peers is seen as important in order to explore new combinations of behaviors, experiment with roles, and develop new adaptive strategies (Smith & Dutton 1979; Sutton-Smith 1979). Time use studies have shown the benefits of increased involvement in structured leisure time activities on development of initiative among youths (Larson 2000; Larson & Verma 1999). Overall, a child taken into well-planned child rehabilitation program as described above (even when he or she is working) is more likely to learn adaptable behavior, initiative, and social skills necessary for participation in civic society.

It is the responsibility of researchers to implant an ethical standpoint and explicate the procedures used when studying working children. A lot of rhetoric has been produced in discussions about the harmfulness of child work, but it is substantiated by very few facts. Perhaps the greatest merit of this kind of research is that it questions the prevailing stereotypes of the lives of child laborers. Similarly, it produces information about the possible health hazards as well as the positive outcomes of working at a young age. It is our duty to make clear the possible benefits of non-formal education, which ideally would be coupled with some degree of formal

education for transfer of specific skills to other activities to occur. Transfer is likely to occur among subjects who have had some school experience (Schliemann & Magalhães 1990). For example, the schooled Ivory Coast weavers who combined both modes of education achieved greater success in planning tasks. This confirms the impact of a mixed type of education, promoted in some developing countries (Tanon 1994; see Segall et al. 1999, pp. 186-190).

I agree with Woodhead's (1999) argument that to explain the effects of work on the psychological aspects of development by means of the mechanistic model of cause and effect is less appropriate than seeking to explain more physical trauma and injuries. Whether young people are affected positively or negatively by their work experiences depends on their personal vulnerability, which is in turn mediated by the economic, social, and cultural context of their work, especially the value placed on their economic activity and expectations for their development and social adjustment. As Whiting and Whiting (1975) emphasized, the feeling of responsibility and sense of pride fostered when children are helping their parents, as well as a sense of belonging to the community, gives a positive flavor to the lives led by so many of the world's children (see also Serpell & Hatano 1997, pp. 339-376).

Overall, our findings showed that the psychological well-being of the children working in the carpet factories were in lower level than that of their peers who went to school. However, the labourers had more internal locus of control showing higher sense of control over their lives. His Majesty's Government of Nepal ought to ensure that quality formal education is available in the areas with high carpet industry concentration in order to enable more children to gain from the formal education which, when accompanied with specific skills, promotes transfer to other activities later in the children's lives. Similarly, HMG of Nepal should arrange non-formal education with non-governmental organizations for the children who come from the poorest families in the carpet manufacturing industry. I hope that this study will help to generate new research on children's participation in working life. In short, although the methods used have been chosen with respect to their global application, they need to be interpreted in their cultural context.

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